

In the Specification:

Cancel the title and replace it with the following title:

Electrostatic Gripping Device

Amend paragraph [0013] as follows:

[0013] In conventional grippers, aluminum (III) oxide is generally used as the insulating layer. A drawback is the low relative dielectric constant. This can be improved by means of additives (for example Al 418 produced by Toto). However, a drawback in this case is that the material has a thickness of approximately 1 mm, with the result that complex grinding work is necessary in order to achieve a desired thickness of approximately 100 [[mm]] μ m. The zirconium oxide which is used in the gripper according to the invention and is used, for example, to produce fuel cells is available in layer thicknesses of 50-300 [[mm]] μ m and therefore requires little or no grinding. Layer thicknesses of below 50 [[mm]] μ m are also conceivable and are achieved by grinding or by applying the zirconium oxide layer in a CVD or sputtering process. The latter method allows layer thicknesses in the region of a few atom diameters. A further advantage results from the higher hardness of the zirconium oxide compared to aluminum oxide. The layer is damaged less quickly both during production and in operation. Moreover, the layer remains smooth, with the result that damage to the wafer is avoided even after prolonged use. A further advantage is the very high resistivity of approx. 10^{14} mm 10^{14} Ω m so that the layer thickness can be kept very small.

A complete listing of the claims, with status identifiers, is submitted on the following pages.

Heiland (H)02ID0374USP; US Patent Application 10/613,870
Amendment responding to Office Action mailed 11/01/2005
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1. (Cancelled)
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17. (Cancelled)
18. (New) A gripper device for picking up, holding and conveying wafers having a predetermined diameter defined by edges, comprising:
a carrier plate having a pick-up side for the wafers,
said carrier plate being made up as a circuit board leads on it;
at least a pair of gripper elements;

each of said gripper elements including a first electrode and a second electrode which are connected to said leads;
said gripper elements being mounted onto said carrier plate and each having a first side arranged as a pick-up side for the wafers, and a second side; said first sides of said gripper elements being covered with a first insulating layer that predominantly comprises zirconium oxide, and said second sides of said gripper elements being covered with a second insulating layer.

19. (New) The gripper device as claimed in claim 18, wherein said first insulating layer comprises zirconium oxide stabilized with yttrium oxide.
20. (New) The gripper device as claimed in claim 18, wherein said carrier plate is a flexible printed circuit board.
21. (New) The gripper device as claimed in claim 18, wherein said electrodes of said gripper elements have a round shape.
22. (New) The gripper device as claimed in claim 18, wherein said gripper elements have a rectangular shape.
23. (New) The gripper device as claimed in claim 18, wherein said first electrode surrounds said second electrode.
24. (New) The gripper device as claimed in claim 18, further comprising DC voltage supplying means to said leads on said circuit board providing a DC voltage less than 900 V.

25. (New) The gripper device as claimed in claim 18, further comprising DC voltage supplying means to said leads on said circuit board providing a DC voltage less than 600 V.
26. (New) The gripper device as claimed in claim 18, further comprising DC voltage supplying means to said leads on said circuit board providing a DC voltage less than 300 V.
27. (New) The gripper device as claimed in claim 18, further comprising DC voltage supplying and grounding means connectable to said electrodes when a wafer is to be put down.
28. (New) The gripper device as claimed in claim 18, wherein three gripper elements are arranged on a circle and fixed on a said carrier plate.
29. (New) The gripper device as claimed in claim 28, wherein the gripper elements are arranged at approximately 120° degree around the circle.
30. (New) The gripper device as claimed in claim 18, wherein said carrier plate has a pair of finger-shaped extensions, each carrying a gripper element, said gripper elements having a distance from one another which is smaller than the diameter of the wafer such that the wafer picked-up by the gripper device can be lifted from the gripper device at the edges of the wafer.
31. (New) The gripper device as claimed in claim 18, wherein an intermediate layer is for bonding said electrodes and said first insulating layer together.
32. (New) The gripper device as claimed in claim 31, wherein said intermediate layer comprises indium.

33. (New) The gripper device as claimed in claim 31, wherein said intermediate layer comprises nickel.
34. (New) The gripper device as claimed in claim 18, wherein said second insulating layer comprises aluminum (III) oxide.
35. (New) The gripper device as claimed in claim 18, wherein said first insulating layer has a layer thickness in the range between 50 μm and 300 μm .
36. (New) The gripper device as claimed in claim 18, wherein said first insulating layer has a layer thickness below 50 μm .